

**REPLACED BY  
ART 34 AMDT**

## Claims

1. Printed circuit board comprising electrical conductor paths and means for electro-optical and/or opto-electrical conversion,  
5 characterized in that  
it also has optical conductor paths.
2. Printed circuit board according to Claim 1,  
characterized in that  
10 the optical conductor paths are fashioned as optical waveguides.
3. Printed circuit board according to Claim 1 or Claim 2,  
characterized in that  
the printed circuit board has, as a multilayer printed circuit  
15 board, a plurality of layers which contain electrical and/or optical  
conductor paths.
4. Printed circuit board according to any one of the preceding  
claims,  
20 characterized in that  
electro-optical and/or opto-electrical and/or optical means are  
integrated into the printed circuit board.
5. Printed circuit board according to any one of the preceding  
25 claims,  
characterized in that  
the means have passive and active optical functions.
6. Printed circuit board according to any one of the preceding  
30 claims,  
characterized in that  
the printed circuit board and/or the means have organic and/or  
inorganic materials.
- 35 7. Printed circuit board according to any one of the preceding  
claims,

characterized in that  
the means comprise micro-electrical-mechanical systems,  
optical filters, optical switches, optical amplifiers, laser  
diodes, photodiodes, arrayed waveguide gratings, branches or  
5 taps, optical modulators or such like.

8. Printed circuit board according to any one of the preceding  
claims,  
characterized in that  
10 the optical conductor paths are fashioned from glass, silicon  
oxide, silicon dioxide or polymer and possibly contain doping.

9. Printed circuit board according to any one of the preceding  
claims,  
15 characterized in that  
the optical conductor paths have three-dimensional optical  
structures.

10. Printed circuit board according to any one of the preceding  
20 claims,  
characterized in that  
the printed circuit board has optical and/or electrical contacts /  
connecting elements.

25 11. Printed circuit board according to any one of the preceding  
claims,  
characterized in that  
means are fashioned as an add-drop multiplexer for an optical  
wavelength division multiplex signal.

5. Add-drop multiplexer according to any one of the preceding claims,  
characterized in that  
the optical conductor paths are fashioned from glass, silicon  
oxide, silicon dioxide or polymer.

6. Add-drop multiplexer according to any one of the preceding claims,  
characterized in that  
the optical conductor paths have three-dimensional optical structures, in particular such that two optical conductor paths which are arranged in different layers of the multilayer printed circuit board are connected to one another.

7. Add-drop multiplexer according to any one of the preceding claims,  
characterized in that  
the optical conductor paths contain doping.

8. Add-drop multiplexer according to any one of the preceding claims,  
characterized in that  
the add-drop multiplexer also has at least one of the following means:

electro-optical means,  
opto-electrical means,  
optical means.